

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

- 1-5. (Canceled)
6. (Currently Amended) A method for decoding channel-encoded data comprising:
- (a) receiving encoded symbols;
 - (b) compressing the encoded symbols to obtain compressed symbols;
 - (c) decoding the compressed symbols using a first look-up table that stores information approximating output of an algorithmic decoding process to obtain decoded symbols;
 - (d) arithmetically combining the compressed symbols with the decoded symbols to obtain a first result; and
 - (e) decompressing the first result to obtain a decompressed first result
 - (f) interleaving the decompressed first result to obtain an interleaved first result;
 - (g) compressing the interleaved first result to obtain a compressed, interleaved first result;
 - (h) decoding the compressed, interleaved first result using a second look-up table that stores information approximating output of an algorithmic decoding process to obtain a decoded first result
 - (i) arithmetically combining the decoded first result with the compressed, interleaved first result to obtain a second result;
 - (j) decompressing the second result to obtain a decompressed second result; and
 - (k) de-interleaving the decompressed second result.

7. (Canceled)
8. (Currently Amended) The method of claim ~~7~~ 6 including:
repeating (b) through (k) until a predetermined criterion is satisfied; and
determining information bits corresponding to the encoded symbols received in
(a).
- 9-12. (Canceled)
13. (Currently Amended) An apparatus for decoding channel-encoded data
comprising:
memory storing a first look-up table with information approximating output of ~~an~~
a first algorithmic decoding process and a second look-up table with information approximating
output of a second algorithmic decoding process; and
a processor configured to
(a) compress a packet of received encoded symbols to obtain compressed
symbols;
(b) decode the compressed symbols using the first look-up table to obtain decoded
symbols;
(c) arithmetically combine the compressed symbols with the decoded symbols to
obtain a first result; ~~and~~
(d) decompress the first result to obtain a decompressed first result
(e) interleave the decompressed first result to obtain an interleaved first result;
(f) compress the interleaved first result to obtain a compressed, interleaved first
result;
(g) decode the compressed, interleaved first result using the second look-up table
to obtain a decoded first result;
(h) arithmetically combine the decoded first result with the compressed,
interleaved first result to obtain a second result;

- (i) decompress the second result to obtain a decompressed second result; and
- (j) de-interleave the decompressed second result.

14. (Canceled)

15. (Currently Amended) The apparatus of claim ~~14~~ 13 wherein the processor is configured to:

- repeat (a) through (j) until a predetermined criterion is satisfied; and
- determine information bits corresponding to the encoded symbols.

16-18. (Canceled)

19. (Currently Amended) An article comprising a computer-readable medium that stores computer-executable instructions for causing a computer system, in response to receiving a channel-encoded data packet, to:

- (a) compress a packet of received encoded symbols to obtain compressed symbols;
- (b) decode the compressed symbols using a first look-up table approximating output of an algorithmic decoding process to obtain decoded symbols;
- (c) arithmetically combine the compressed symbols with the decoded symbols to obtain a first result; ~~and~~
- (d) decompress the first result to obtain a decompressed first result
- (e) interleave the decompressed first result to obtain an interleaved first result;
- (f) compress the interleaved first result to obtain a compressed, interleaved first result;
- (g) decode the compressed, interleaved first result using a second look-up table approximating output of an algorithmic decoding process to obtain a decoded first result;
- (h) arithmetically combine the decoded first result with the compressed, interleaved first result to obtain a second result;
- (i) decompress the second result; and

(j) de-interleave the decompressed second result.

20. (Canceled)

21. (Currently Amended) The article of claim ~~20~~ 19 including instructions for causing the computer system to:

repeat (a) through (j) until a predetermined criterion is satisfied; and
determine information bits corresponding to the encoded symbols.

22. (Previously Presented) The article of claim 19 including instructions for causing the computer system to decode the compressed symbols using a first look-up table approximating output of a soft-input soft-output algorithmic decoding process, a soft-input hard-output algorithmic decoding process, a hard-input soft-output algorithmic decoding process, or a hard-input hard-output algorithmic decoding process.

23. (Withdrawn) A method comprising:
receiving a packet of encoded symbols;
jointly quantizing multiple symbols;
decoding the jointly quantized symbols to obtain a result; and
decompressing the result into individual decoded symbols.

24. (Withdrawn) The method of claim 23 including decoding the jointly quantized symbols using a look-up table that approximates output of an algorithmic decoding process.

25. (Withdrawn) The method of claim 23 including decoding the jointly quantized symbols using a look-up table that approximates output a soft-input soft-output algorithmic decoding process, a soft-input hard-output algorithmic decoding process, a hard-input soft-output algorithmic decoding process, or a hard-input hard-output algorithmic decoding process.

26. (Withdrawn) An article comprising a computer-readable medium that stores computer-executable instruction for causing a computer system, in response to receiving a packet of encoded symbols, to:

jointly quantize multiple ones of the symbols;
decode the jointly quantized symbols to obtain a result; and
decompress the result into individual decoded symbols.

27. (Withdrawn) The article of claim 26 including instructions for causing the computer system to decode the jointly quantized symbols using a look-up table that approximates output of an algorithmic decoding process.

28. (Withdrawn) The method of claim 26 including instructions for causing the computer system to decode the jointly quantized symbols using a look-up table that approximates output a soft-input soft-output algorithmic decoding process, a soft-input hard-output algorithmic decoding process, a hard-input soft-output algorithmic decoding process, or a hard-input hard-output algorithmic decoding process.

29. (Withdrawn) A method for decoding channel data comprising:
receiving a packet of encoded data; and
decoding the encoded packet using a look-up table that stores information approximating output of an algorithmic decoding process,
wherein the algorithmic decoding process is a process selected from the group consisting of a soft-input soft-output algorithmic decoding process, a soft-input hard-output algorithmic decoding process, a hard-input soft-output algorithmic decoding process and a hard-input hard-output algorithmic decoding process.

30. (Withdrawn) A method comprising:
encoding a packet of data at a transmitter;
transmitting the packet of encoded data from the transmitter to a receiver;
receiving the packet of encoded data at the receiver; and

decoding the packet of encoded data at the receiver,
wherein the decoding comprises:

finding data in a look-up table that corresponds to the packet of encoded data, wherein the data in the look-up table approximates an output of an algorithmic decoding process to substantially reverse the encoding.

31. (Withdrawn) A method comprising:

- (a) encoding a packet of data at a transmitter;
- (b) transmitting the packet of encoded data from the transmitter to a receiver;
- (c) receiving the packet of encoded data at the receiver;
- (d) compressing the packet of encoded data to obtain a compressed packet of encoded data;
- (e) decoding the compressed packet of encoded data using a first look-up table that stores information approximating the output of an algorithmic decoding process to obtain a decoded packet of data;
- (d) arithmetically combining the compressed packet of encoded data with the decoded packet of data to obtain a first result; and
- (e) decompressing the first result to obtain a decompressed first result.